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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,184	02/26/2002	Kenneth R. Schroll	10001-29977	5110

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EXAMINER

PETKOVSEK, DANIEL J

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 11/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/083,184

Applicant(s)

SCHROLL ET AL.

Examiner

Daniel J Petkovsek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/26/2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: *Bun Healy*

DETAILED ACTION

Information Disclosure Statement

1. The prior art document submitted by Applicant in the Information Disclosure Statements filed on February 26, 2002, has been considered and made of record (note attached copy of forms PTO-1449).

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Specification

3. The disclosure is objected to because of the following informalities: "fibers 110 and 112" should be changed to "fibers 110 and 114". (page 6, line 11).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Doyle U.S.P. No. 6,009,219.

Doyle U.S.P. No. 6,009,219 teaches (Fig. 5, column 5 lines 35-57) an apparatus comprising of the following: a first optical fiber 43 having a first end, a first lens 45 connected to first end of fiber 43, a second optical fiber 53 having a first end, a second lens 55 connected to first end of fiber 53, a retro-reflective switching element 220 to create a U-turn in the optical signal traveling from fiber 43 to fiber 53, and a base holding member 37 connected to retro-reflective device 220 to provide optical alignment of first lens 45 and second lens 55, which clearly, fully meets Applicant's claimed limitations.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter et al. U.S.P. No. 6,137,933.

Hunter et al. U.S.P. No. 6,137,933 teach (Fig. 2, column 5 line 66 through column 6 line 42) a device for coupling optical signals in a U-turn fashion comprising the following: an optical fiber 42, a first lens 30 connected to first end of fiber 42, a second set of fiber(s) 36, a second lens 24 connected to first end of fiber(s) 36, and a retro-reflecting element 18 coupling the optical signals between elements 12 and 14. Hunter et al. '933 does not explicitly teach the use of a substrate securing the retro-reflective element 18 in optical alignment with the first and

second lenses 24 and 30. However, it is obvious from the figures to a person having ordinary skill in the art that the entire device in Fig. 2 and described in disclosure comprises the functionality of the claimed invention of Applicant. The homogenous index boot lenses 20, 26, 28, and 32, the collimating lenses 24 and 30, as well as the prism region 18 together form to comprise a united material with the same aligning functionality of a substrate, encompassing an entire device 10. The prism region of 18 is properly aligned to the collimating regions 12 and 14 and fibers 36 and 42 of device 10.

Regarding claims 2-4 and 7, the use of a range of different substrates, substrate processes, and prism formations, although not explicitly taught, does not improve upon the overall scope of the invention of Hunter et al. '933. Regarding claims 5-6, 9, 11, and 13, an optical cement is used to affix collimating regions to the prism regions (column 6, lines 17-18). Regarding method claims 8 and 10, the method limitations claimed would be inherently included in the device described by Hunter et al. '933 in the rejection described above.

Regarding claims 15 and 16, the device of Hunter et al. '933 comprises a prism 18, a fiber 42 connected to prism, a lens 24 connected to prism, a coupler 12 connected to lens, and a second fiber(s) 36 connected to coupler. The refractive index matching between fiber and coupler (formed as a gel) is not explicitly stated, but would have been an obvious modification of the device of Hunter et al. '933. Matching refractive indices between fibers and couplers, as well as optical gels, are well known in the art. Regarding claims 12, 14, 17 and 18, the use of coreless (air) regions for optical coupling in retro-reflecting regions is well known in the art, and forming the prism 18 of Hunter et al. '933 by use of hollow or coreless material (two mirrors) would have been obvious to a person having ordinary skill in the art. The limitation of a coreless fiber

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material does not change the scope of the invention, creating a U-turn region for optical coupling between fibers using lenses and a prism.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Tamada et al. U.S.P. No. 6,282,006 with respect to reflecting elements imbedded in substrates.

Wade U.S.P. No. 6,243,513, Lin et al. U.S.P. No. 6,400,862, Laor U.S.P. No. 6,275,626, and Bhagavatula U.S.P. No. 5,841,583 with respect to retro-reflective devices using lenses.

Husain et al. U.S.P. No. 6,453,083 with respect to reflective device on substrates.

Keil et al. U.S.P. No. 4,767,171 with respect to reflection devices using mirrors, lenses, and fibers.

Harrington U.S.P. No. 5,815,627 with respect to hollow waveguiding regions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (703) 305-6919. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 872-9321.



Daniel Petkovsek
November 13, 2002



Brian Healy
Primary Examiner